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AGILENT TECHNOLOGIES, INC.  
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Intellectual Property Administration  
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EXAMINER
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LEE, BENNY T

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* LEWIS R. DOVE and JOHN F. CASEY

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Appeal 2007-4370  
Application 10/761,972  
Technology Center 2800

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Decided: April 21, 2008

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Before JOSEPH F. RUGGIERO, MAHSHID D. SAADAT, and KEVIN F.  
TURNER, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1-3, 5, 8, 12, 13, and 17. Claims 4, 6, 7, 9-11, 14-16, and 18-20 have been objected to for being dependent upon rejected claims, but otherwise allowable if rewritten in independent form to include all the limitations of their base claim and any intervening claims. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants invented a microwave conductor circuit arrangement and its method of making. According to Appellants, first and second mounds of dielectric respectively encapsulate first and second conductors where a third dielectric fills a valley between the first and second mounds of dielectric, and encapsulates a third conductor. (Spec. 2). An understanding of the invention can be derived from a reading of independent claims 1 and 8, which are reproduced as follows:

1. Apparatus, comprising:
  - a) first and second mounds of dielectric, respectively encapsulating first and second conductors;
  - b) a third dielectric, filling a valley between the first and second mounds of dielectric, and encapsulating a third conductor; and
  - c) a first ground shield deposited on at least sides of the first and second mounds of dielectric, abutting the third dielectric.
  
8. A method for forming shielded transmission lines, comprising:

- a) depositing first and second lower mounds of dielectric on a first ground shield;
- b) depositing conductors on the first and second lower mounds of dielectric;
- c) depositing first and second upper mounds of dielectric on the first and second lower mounds of dielectric;
- d) depositing a second ground shield over the first and second upper and lower mounds of dielectric;
- e) depositing a third lower dielectric in a valley between the first and second upper and lower mounds of dielectric;
- f) depositing a conductor on the third lower dielectric;
- g) depositing a third upper dielectric on the third lower dielectric; and
- h) depositing a third ground shield over the third upper dielectric.

The Examiner relies on the following prior art references:

Leeb	US 5,317,292	May 31, 1994
Matsubayashi	US 5,426,399	Jun. 20, 1995
Dove	US 6,457,979 B1	Oct. 1, 2002

The rejections as presented by the Examiner are as follows:

Claims 1-3 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Leeb or Matsubayashi.

Claims 8, 12, 13, and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Leeb.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Leeb and Dove.

Rather than repeat the arguments here, we make reference to the Briefs and the Answer for the respective positions of Appellants and the Examiner.

We affirm-in-part.

#### ISSUES

1. Under 35 U.S.C. § 102(b), with respect to the appealed claims 1-3, do Leeb and Matsubayashi each anticipate the claimed subject matter by teaching all of the claimed limitations?
2. Under 35 U.S.C. § 102(b), with respect to the appealed claims 8, 12, 13, and 17, does Leeb anticipate the claimed subject matter by teaching all of the claimed limitations?
3. Under 35 U.S.C. § 103(a), with respect to the appealed claim 5, would the ordinarily skilled artisan have found it obvious to modify Leeb or Mastubayashi with Dove to render the claimed invention unpatentable?

#### PRINCIPLES OF LAW

1. *Anticipation*

“A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference.” See *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994). Anticipation of a claim requires a finding that the claim at issue reads on a prior art reference. *Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342, 1346 (Fed. Cir. 1999) (quoting *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 781 (Fed. Cir. 1985)).

2. *Obviousness*

“The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art.” See *In re Young*, 927 F.2d 588, 591 (Fed. Cir. 1991), (citing *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)), and *In re Kahn*, 441 F.3d 977, 987-88 (Fed. Cir. 2006).

The Examiner can satisfy this burden by showing “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”. *KSR Int'l. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

## ANALYSIS

1. 35 U.S.C. § 102 Rejection of claims 1-3

Appellants disagree with the Examiner’s findings in *Leeb* and *Matsubayashi* with respect to the limitation of “a third dielectric, filling a

valley between the first and second mounds of dielectric, and encapsulating a third conductor,” as recited in claim 1 (App. Br. 11). Appellants further argue that the third dielectric of Leeb and Matsubayashi “*disposed in a valley adjacent*” first and second dielectric mounds is different from the claimed third dielectric mound “*filling a valley between*” the first and second mounds (App. Br. 10).

The Examiner characterizes the space between the raised sloping walls of the first and second transmission lines in either Leeb or Matsubayashi as a “valley” (Ans. 6) and asserts that the transmission line placed in such a space would be “filling” the “valley” (Ans. 7). The Examiner further argues that the claimed “filling the valley” reads on the transmission line positioned in the space between the two transmission lines in Leeb or Matsubayashi since the claim does not specify the extent to which the valley is to be filled (*id.*).

We agree with the Examiner that the broadest reasonable interpretation of claim 1 does not require that the space between the first and the second mounds be completely filled. Therefore, the placement of the middle transmission line in Leeb or Matsybayashi takes up some space and does fill the “valley” or the space between the first and second mounds. See Figure 10 of Leeb and Figure 1 of Matsubayashi.

Appellants’ argument regarding the sequence or the timing of dielectric layer formation in Leeb or Matsubayashi (App. Br. 11; Reply Br. 2) is also misplaced since claim 1 recites an apparatus in which the sequence or timing of the processing of dielectric layers is not specified in its final

structure. In fact, the recited terms “filling” and “deposited” merely define the relative position of the third dielectric and the first ground shield, and are not related to the timing of their formation.

Under the facts we have here and the arguments presented by the Examiner and Appellants as discussed above, we have concluded that a prima facie case of anticipation has been established. Accordingly, we sustain the 35 U.S.C. § 102(b) rejection of claim 1, as well as claims 2 and 3 which have not been argued separately, as anticipated by Leeb or Matsubayashi.



2. 35 U.S.C. § 102 Rejection of claims 8, 12, 13, and 17

Appellants contend that Leeb does not disclose the recited steps in claims 8 and 13, which imply a specific order for performing the claimed steps (App. Br. 12). Appellants point out that claim 8 requires depositing a “third lower dielectric” in “a valley between the first and second upper and lower mounds of dielectric,” which requires depositing the first and second mounds before the third dielectric is formed (*id.*). Similarly, Appellants argue that claim 13 requires depositing the ground shields as “ground shield walls” and “ground shield caps” in two different parts (*id.*).

The Examiner responds by arguing that since the recited method steps in claims 8 and 13 do not specify any particular order to be followed in the claimed steps of formation, they are met by the laminating method of Leeb (Ans. 8). Additionally, the Examiner asserts that a formation of multiple mounds at the same time and depositing the ground shields over at least a portion of the lower mounds in Leeb meet the claimed limitations of claims 8 and 13 (*id.*).

A review of Leeb reveals that in the only processing method used in forming the dielectric mounds, the first dielectric substrate 1 is deposited for all the mounds (col. 3, ll. 32-35) and later the dielectric substrate 5 is simultaneously deposited for all the mounds (col. 3, ll. 49-53). The two dielectric substrates that are formed and etched at the same time to form multiple mounds, as argued by Appellants (App. Br. 12; reply Br. 2-3), do not allow a third dielectric to be formed in a valley which is not yet formed. Similarly, we do not agree with the Examiner that forming a blanket ground shield in Leeb meets the specific steps of depositing different sections of the ground shield on the walls of only the first and the second mounds and the caps over the first, second, and the third mounds, as recited in claim 13.

Therefore, as we find no teachings in Leeb that meet the recited method steps of claims 8 and 13, we agree with Appellants that Leeb cannot anticipate the claimed subject matter. Therefore, we do not sustain the 35 U.S.C. § 102(b) rejection of claims 8 and 13 over Leeb, as well as claims 12 and 17 dependent thereon.

3. 35 U.S.C. § 103 *Rejection of claim 5*

With respect to the rejection of claim 5, we note that the Examiner further relies on Dove for teaching ceramic dielectrics (Ans. 5). However, the Examiner's 35 U.S.C. § 103(a) rejection of claim 5 is sustained since Appellants' arguments in response (App. Br. 13) reiterate the contention that Leeb and Matsubayashi do not teach all of the recited limitations of claim 1, which arguments we found to be unpersuasive as discussed *supra*, and state that Dove does not teach what is missing in these two references.

CONCLUSION

On the record before us, Appellants have failed to show that the Examiner has erred in rejecting claims 1-3 and 5. However, we found error in the Examiner's rejection of claims 8, 12, 13, and 17. In view of our analysis above, the decision of the Examiner rejecting claims 1-3 and 5 is affirmed, but reversed with respect to claims 8, 12, 13, and 17.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

Appeal 2007-4370  
Application 10/761,972

gvw

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